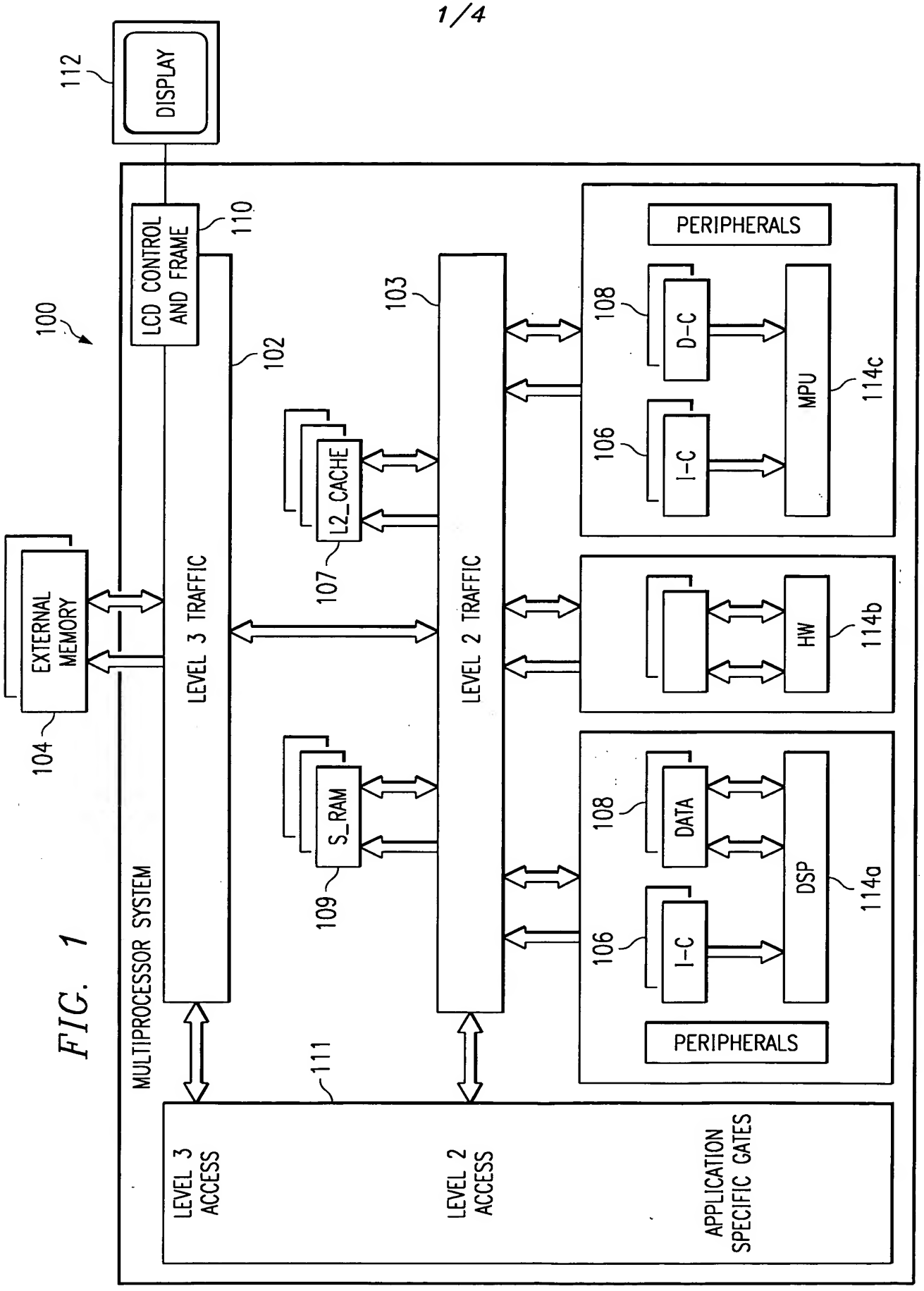
100
MULTIPROCESSOR SYSTEM
112
DISPLAY
LCD CONTROL AND FRAME
110
EXTERNAL MEMORY
104
LEVEL 3 TRAFFIC
102
LEVEL 2 TRAFFIC
103
L2_CACHE
107
S_RAM
109
PERIPHERALS
D-C
I-C
MPU
114c
108
106
HW
114b
DATA
DSP
114a
111
LEVEL 3 ACCESS
LEVEL 2 ACCESS
APPLICATION SPECIFIC GATES

FIG. 1

FIG. 2

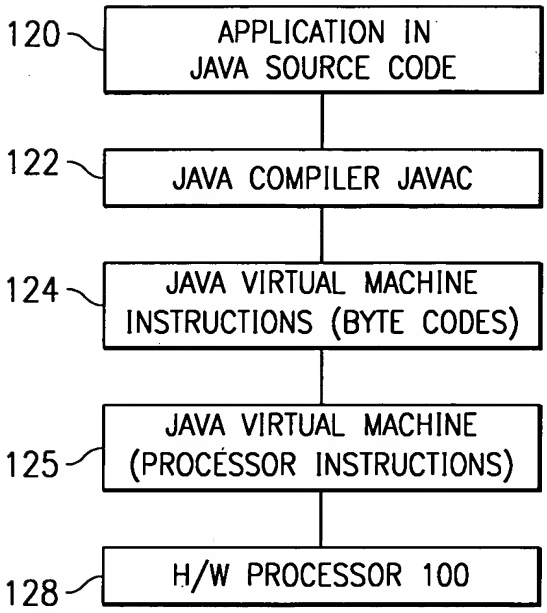

FIG. 5

INTEL PENTIUM II				TI DSP C55X			
	LANGUAGE	CYCLE	MEMORY		LANGUAGE	CYCLE	MEMORY
SWITCH	ANSIC	162	20	SWITCH	ANSIC	294	40
THREADED	GNUC	132	80	THREADED	C/ANSI	183	80
RATIO		19%	400%	RATIO		62%	200%
				SWITCH	ANSIC	294	40
				SWITCH-2	ANSIC	622	20
				RATIO		211%	50%

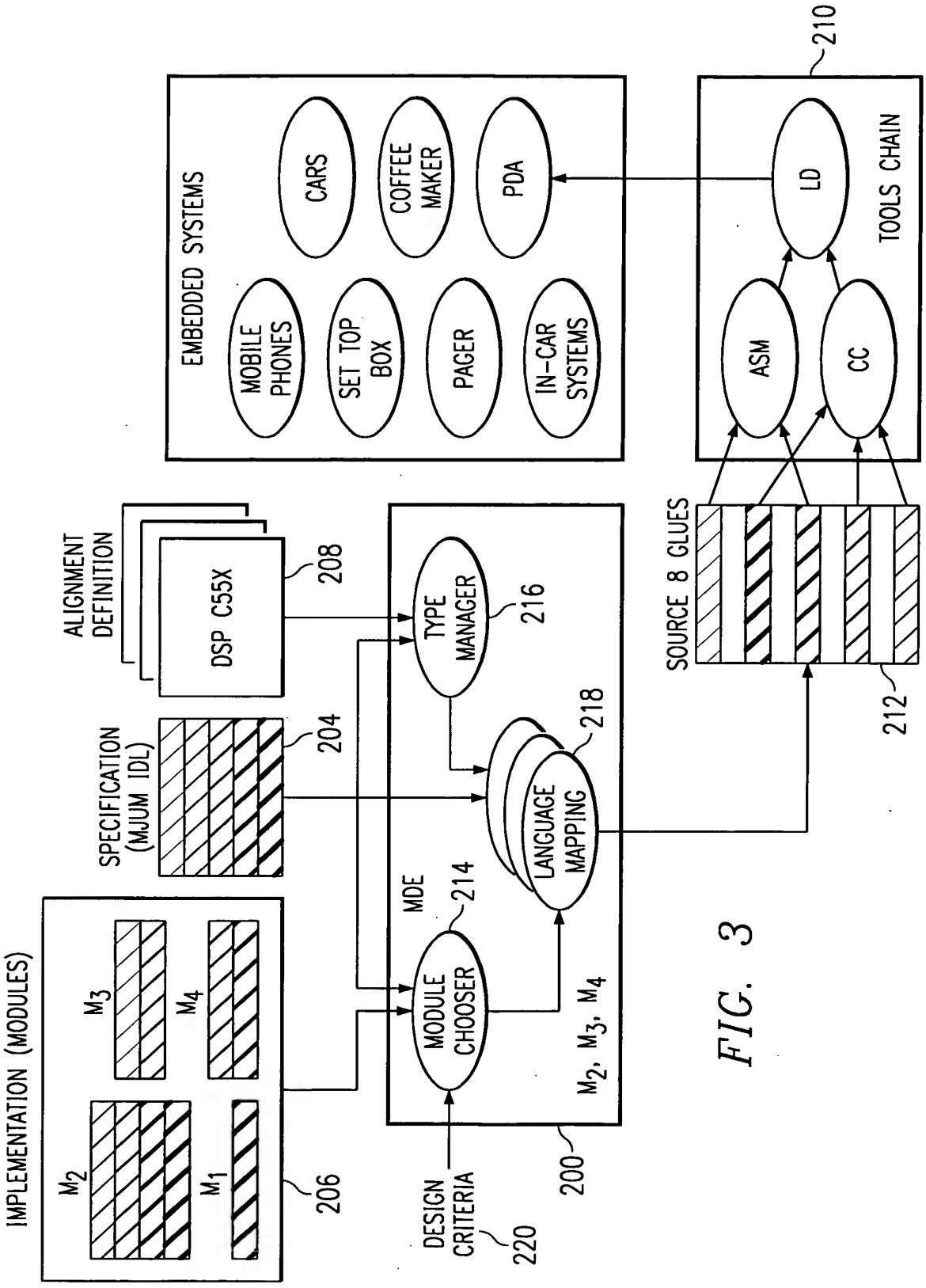
EMBEDDED SYSTEMS
MOBILE PHONES
SET TOP BOX
PAGER
IN-CAR SYSTEMS
CARS
COFFEE MAKER
PDA
TOOLS CHAIN
ASM
CC
LD
210
SOURCE 8 GLUES
212
ALIGNMENT DEFINITION
DSP C55X
208
SPECIFICATION (MJUM IDL)
204
IMPLEMENTATION (MODULES)
M2
M1
M3
M4
206
MDE
TYPE MANAGER
216
LANGUAGE MAPPING
218
MODULE CHOOSER
214
M2, M3, M4
200
DESIGN CRITERIA
220

FIG. 3

FIG. 4

MODULE	DESCRIPTION
ARITHMETIC	
INTEGER	REPRESENTATION, OPERATIONS AND CONVERSION OF JAVA INT
LONG	REPRESENTATION, OPERATIONS AND CONVERSION OF JAVA LONG
FLOAT	REPRESENTATION, OPERATIONS AND CONVERSION OF JAVA FLOAT
DOUBLE	REPRESENTATION, OPERATIONS AND CONVERSION OF JAVA DOUBLE
JAVA FRAME	
LOCAL	LOCAL VARIABLES MANAGEMENT AND ACCESS
STACK	STACK MANAGEMENT AND ACCESS
CONTROL FLOW	
MOTOR	INTERPRETATION ENGINE
BRANCH	BRANCHING AND SUBROUTINE
EXCEPTION	EXCEPTION MANAGEMENT AND BRANCHING
OBJECT	
OBJECT	REPRESENTATION AND OPERATIONS ON OBJECT AND REFERENCE
FIELD	REPRESENTAION OF 'SMALL' TYPE AND FIELD ACCESS
ARRAY	REPRESENTATION AND OPERATIONS ON ARRAY AND ELEMENT
METHOD	METHOD INVOCATION AND PARAMETERS PASSING
INTERFACE	INTERFACE MANAGEMENT
STRING	INTERNAL STRING AND JAVA STRING REPRESENTATION
CLASS	
CIREPOS	CLASS REPOSITORY
LOAD	CLASS LOADER MANAGER
MISCELLANEOUS	
JNI	JAVA NATIVE INTERFACE SUPPORT
THREAD	THREAD AND MONITOR SUPPORT